965,141

PATENT SPECIFICATION

965,141

DRAWINGS ATTACHED.

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COMPLETE SPECIFICATION.

Improvements in or relating to Sound Proofing or Sound Dampening Curtains.

We, GEO. W. KING LIMITED, a British Company, of Argyle Works, Stevenage, Hertfordshire, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to sound proofing or sound dampening curtains intended for subdividing or partitioning rooms, halls or the like and has for its chief object to evolve a curtain which when in its operative position will be effective to dampen or to minimise the transmission of sounds from one part of the sub-divided space to the other.

According to the invention a curtain for use in sub-dividing or partitioning rooms or other spaces will comprise two flexible sheets for example of leaded plastic material, which are secured at their upper edges to the opposed sides of a common beam or the like adapted to be anchored to a structural member extending across the upper part of a room or space, the lower edges of said sheets being secured to opposed sides of a second beam or the like and there being hoisting ropes or cables which extend through spaced apertures in the upper beam or the like and after passing through the space between the sheets are attached at appropriately spaced points to said lower beam or the like. If desired one or more spacer bars or the like may be interposed between the sheets in such a manner that when the curtain is in its operative position said spacer bar or bars will be disposed at an appropriate level or levels to ensure that the spacing between the sheets will be maintained. Where such spacer bars or the like are present they will incorporate suitable apertures through which the hoisting ropes or cables will pass.

In order that the said invention may be more readily understood and readily carried into effect reference will now be made to the accompanying drawings which show one embodiment by way of example and in which:—

Figure 1 is a longitudinal or vertical sectional view of a sound dampening curtain when in its lowered or operative position;

Figure 2 is a view illustrating the curtain of Figure 1 in its raised or folded position;

Figure 3 is a horizontal sectional view of a part of the curtain and illustrates one method of sealing the lateral edge portions of the curtain when in its lowered or operative position.

Referring now to the drawings 10, 11 denote two flexible sheets consisting for example of leaded plastic material such as polythene to which lead powder has been added, such sheets being so dimensioned that when in the lowered or operative position they will constitute an effective partition sub-dividing a hall, room or other space. At their upper edges the sheets 10, 11 are secured to a common beam 12 which extends across the full width of the curtain. At their lower edges said sheets are similarly secured to a common beam 13 which also extends across the full width of the curtain and may be of greater weight than the beam 12. Attached to the beam 13 at spaced points along its length is a plurality of hoisting ropes or cables, one of which is indicated at 14, such ropes or cables being adapted when the curtain is in its lowered or dropped position to extend vertically upwardly through the space between the two

[*Price* 4*s.* 6*d.*]

sheets 10, 11 and through appropriately disposed apertures in the upper beam 12 which latter is secured to an appropriate anchorage e.g. a structural rib or beam such as is indicated at 30 extending across the roof of the hall, or room. The hoisting ropes or cables issuing from apertures in the upper beam 12 will each pass around suitable guide sheaves or pulleys such as indicated at 15, 16 and thence to the winding drum such as is indicated at 17 driven by an electrically operated motor 18. In the embodiment illustrated the winding gear is mounted on a suitable supporting structure suspended from the ceiling and is shrouded or masked by a so-called suspended ceiling 19, the latter incorporating a gap or slot 20 adapted to accommodate curtain.

21 denotes a base strip or plate member extending across the full width of the lower end of the curtain, such strip or plate member being adapted to seat stably on the floor or other surface when the curtain is lowered as shown in Figure 1 and to lie substantially flush with and substantially to close the aforesaid gap or slot 20 in the suspended ceiling 19 when said curtain is in the raised position.

In order to ensure that the two sheets 10, 11 will remain in the desired spaced relationship when the curtain is lowered transversely extending spacer bars or strips such as indicated at 22 are provided at appropriately spaced levels such bars being provided with apertures through which the hoisting ropes or cables will freely pass.

When the curtain is lowered as illustrated in Figure 1 the two sheets 10, 11 will be disposed in spaced parallel relationship in vertical planes and will be maintained substantially rigid by virtue of the weight of the lower beam 13 and its associated base strip or plate member 21. Conveniently the walls of the room or space which the curtain is required to divide will each be fitted as indicated in Figure 3 with a vertically extending rib or the like such as indicated at 23, such ribs or the like being so disposed that when the curtain is lowered the edge portions of the sheets 10, 11 will embrace or overlap the respective ribs or the like 23 in the manner indicated in Figure 3. Conveniently the appropriate faces of the ribs 23 will have sealing strips of felt or other appropriate material affixed thereto as indicated at 24 while manually operated hinged sealing flaps such as are indicated at 25 (Figure 3) will also be provided adapted when moved into their operative positions as shown to clamp the edge portions of the curtain. The sealing flaps 25 will conveniently be interlocked by means of appropriate limit switches with the lifting gear so that the latter will be prevented from operation to raise the curtain so long as said sealing flaps are in their operative positions. As indicated in the embodiment illustrated in Figure 3 the ribs 23 may be each provided with an additional vertically extending strip 26 adapted to serve as a guide for the curtain during raising and lowering. In the embodiment illustrated the lower beam 13 and the transverse spacer bars 22 are each in the form of two parallel bars maintained in appropriately spaced relation by means of spacer blocks or the like such as indicated at 27 and the arrangement is such that the guide strip 26 will be disposed between the transversely extending bars constituting said lower beam and spacer bars respectively.

Upon operation of the hoisting gear to raise the curtain the lifting force will be applied to the lower beam 13, the arrangement being such that when said curtain is fully raised the sheets will by virtue of the presence of the spacer bar 22 fall into a succession of loops or folds approximating to a concertina effect such as is illustrated clearly in Figure 2. In order to ensure correct folding of the sheets on raising of the curtain it may be desirable to incorporate lazy-tong linkages such for example as is indicated in dotted lines at 28 in Figure 1. In such a case a set of lazy-tong linkages would be provided in each section of the curtain i.e. between the beam 13 and the lowermost spacer bar 22 and also between successive bars, each set consisting of two or more groups of links according to the curtain length.

In order to reduce the strain on the hoist ropes or cables it may be desirable to anchor to the spacer bars additional ropes or cables the opposite ends of which are anchored to the upper beam, such additional ropes or cables being of such a length that when the curtain is lowered they will be fully extended and will effectively support the spacer bars and hence effectively support a part of the weight of the curtain.

While a single curtain such as is above described and illustrated will constitute an effective partition possessing sound dampening properties it may be found desirable in some cases where a room or space is to be sub-divided to utilise two curtains disposed at opposite sides of a beam or rib which extends across the ceiling of the room or space and effectively constitutes an integral part of the structure of said room or space. In such a case the upper beams of the two curtains will be affixed to the structural beam or rib, suitable sealing means being interposed to provide the appropriate sound dampening effect. If desired lever operated cam, toggle or like means may be provided which are operable to force the upper parts of the curtains against appropriate seals on the aforesaid structural beam or rib. With

the arrangement envisaged the two curtains each comprising two spaced sheets will when dropped be disposed in spaced parallel relationship in vertical planes and if desired hoisting equipment common to both curtains may be employed or alternatively separate hoisting means may be provided in respect of each curtain and such means may or may not be synchronised so that the curtains may be raised or lowered together.

WHAT WE CLAIM IS:—

1. A sound-proofing or sound-dampening curtain comprising two flexible sheets which are secured at their upper edges to the opposed sides of a common beam or the like adapted to be attached to a fixed anchorage located in the upper part of a room or space, the lower edges of said sheets being secured to opposed sides of a second beam or the like and there being hoisting ropes or cables which extend through spaced apertures in the upper beam or the like and after passing through the space between the sheets are attached at appropriately spaced points to said lower beam or the like.

2. A sound-proofing or sound-dampening curtain as in Claim 1 in which one or more spacer bars or the like are disposed between the sheets to maintain the spacing therebetween, the arrangement being such that when the curtain is in its operative or lowered position the or each bar or the like will extend transversely of the sheets and parallel or substantially parallel to the upper and lower beams.

3. A sound-proofing or sound-dampening curtain as in Claim 1 or 2 in which the sheets comprise leaded plastic material.

4. A sound-proofing or sound-dampening curtain as in any of Claims 1—3 in which the hoist ropes or cables are attached to winding gear disposed in the upper part of the room or space in which the curtain is located.

5. A sound-proofing or sound-dampening curtain as in Claim 4 in which the winding gear is located above a suspended ceiling which incorporates a slot or channel through which the curtain may pass, the curtain being fitted at its lower part with a base or foot portion adapted when said curtain is in its raised position substantially to close said slot or channel.

6. A sound-proofing or sound-dampening curtain as in any of the preceding claims in which the lateral edge portions of the sheets are adapted when the curtain is in its lowered position to overlap or embrace vertical ribs or the like projecting outwardly from the walls of the room or space in which the curtain is located.

7. A sound-proofing or sound-dampening curtain as in Claim 6 in which sealing flaps or the like are provided adapted when the curtain is in its lowered position to be operated to clamp the edge portions of the sheets against the ribs or the like.

8. A sound-proofing or sound-dampening curtain as in Claims 4 and 7 in which means are provided adapted to prevent operation of the winding gear when the sealing flaps are in their operative positions.

9. A sound-proofing or sound-dampening curtain as in any of the preceding claims in which lazy-tong or like linkages are disposed in the space between the sheets to ensure satisfactory folding thereof on raising of the curtain.

10. A sound-proofing or sound-dampening curtain or the like as in any of Claims 2—9 in which additional ropes or cables are attached to the spacer bars or the like to reduce the strain on the hoist ropes or cables.

11. A sound-proofing or sound-dampening curtain substantially as hereinbefore described with reference to the accompanying drawings.

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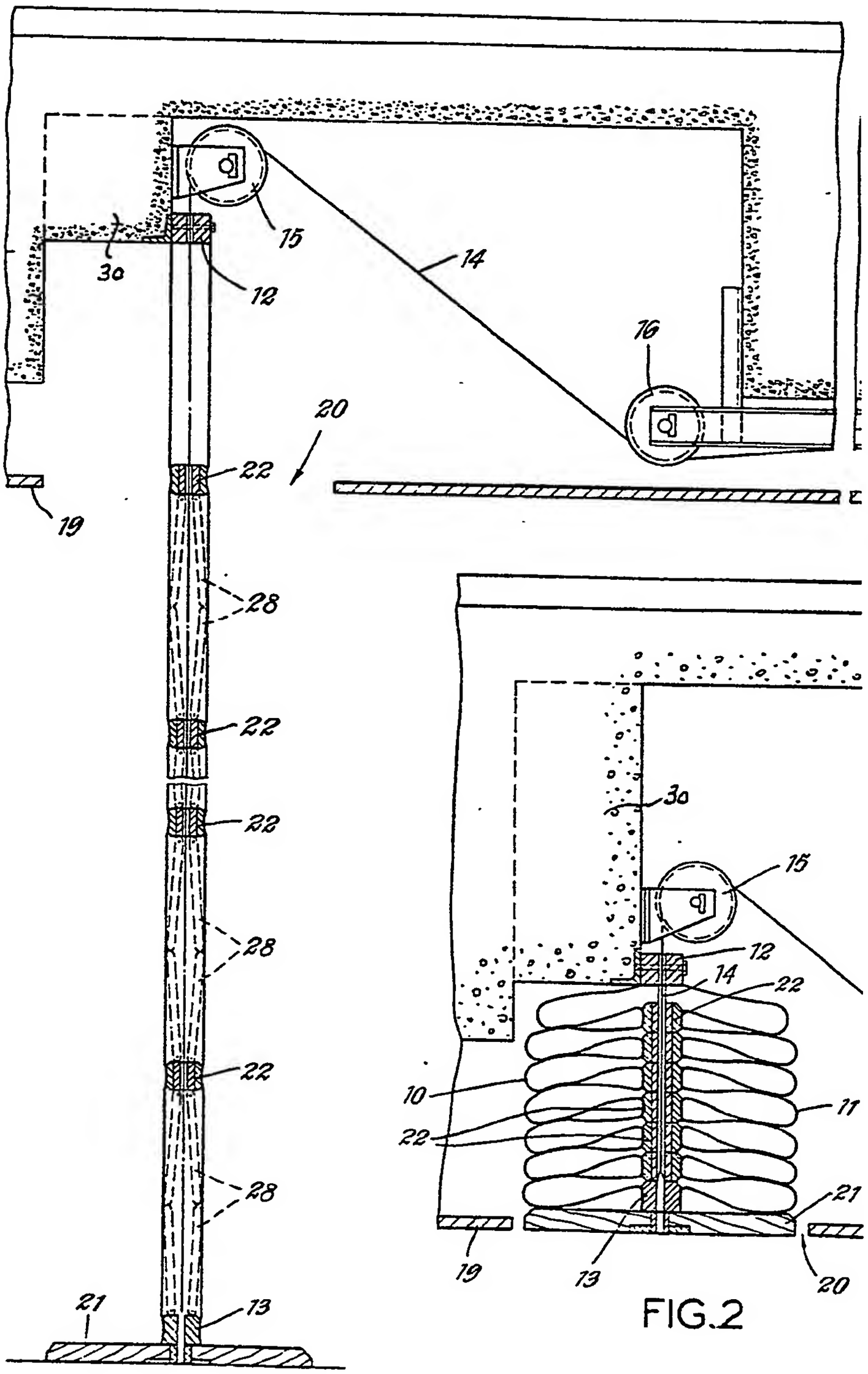
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FIG.2

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1 SHEET *This drawing is a reproduction of the Original on a reduced scale*

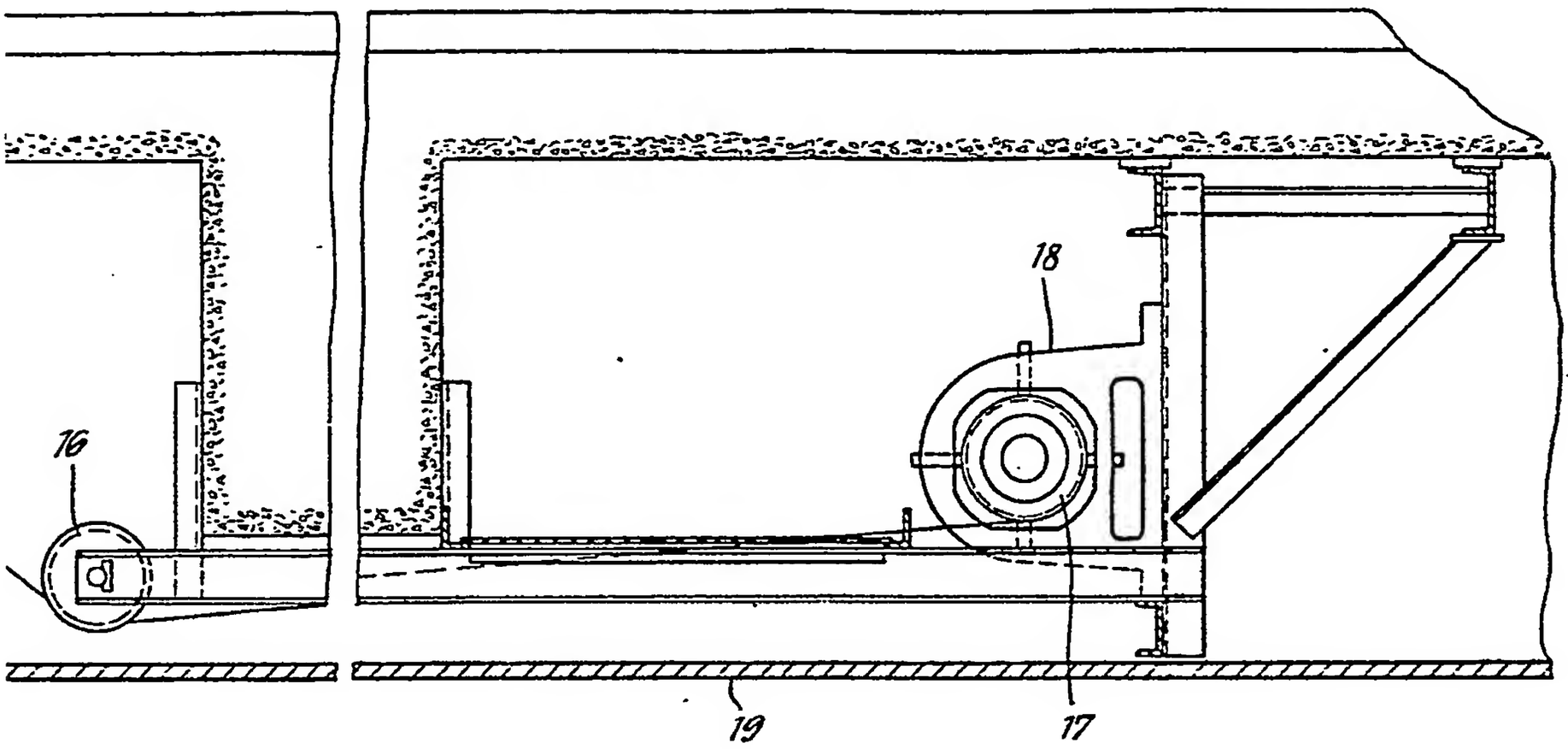

FIG.1

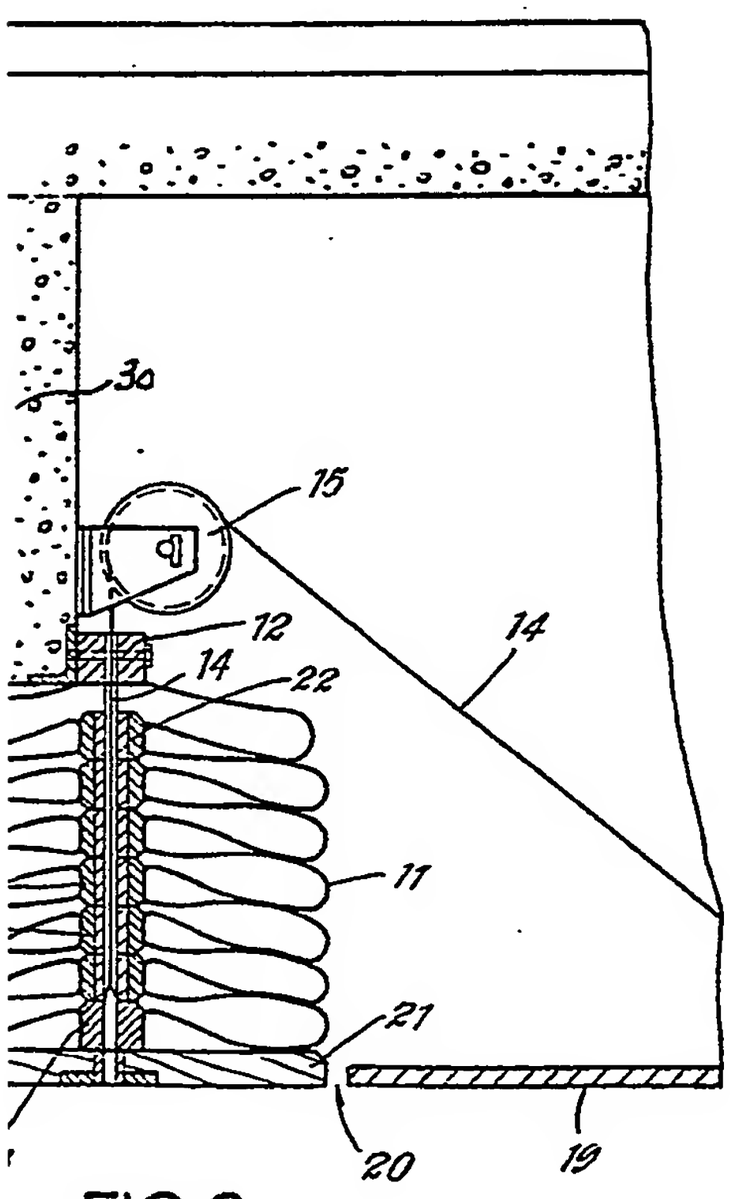

FIG.2

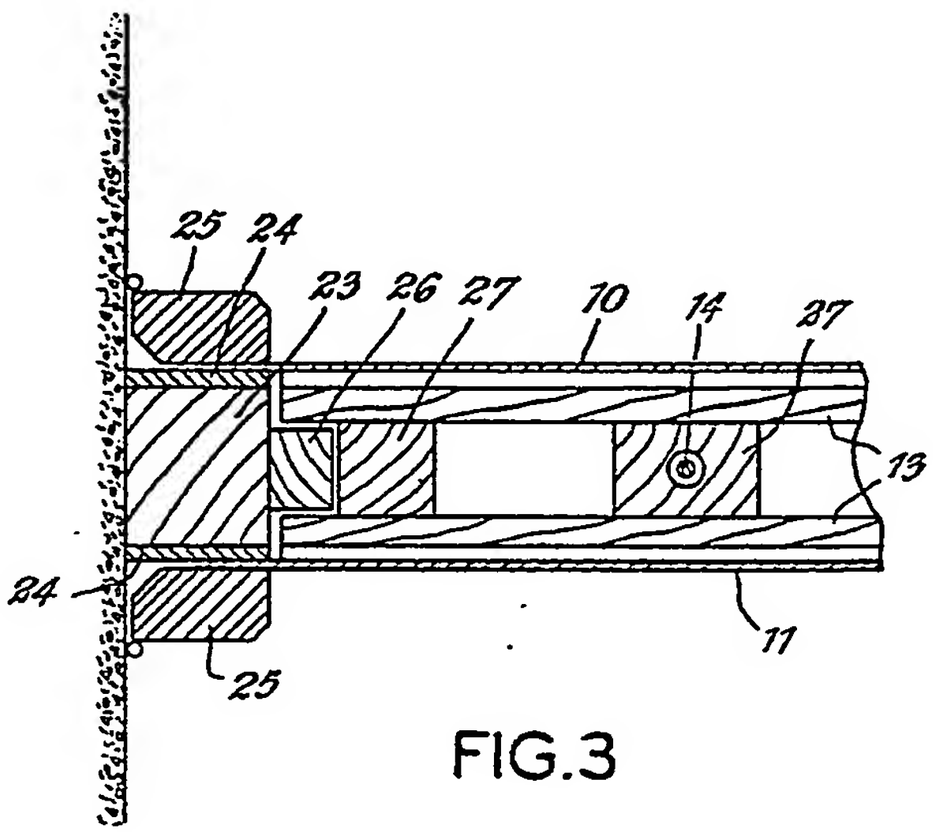

FIG.3

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1 SHEET *This drawing is a reproduction of the Original on a reduced scale*

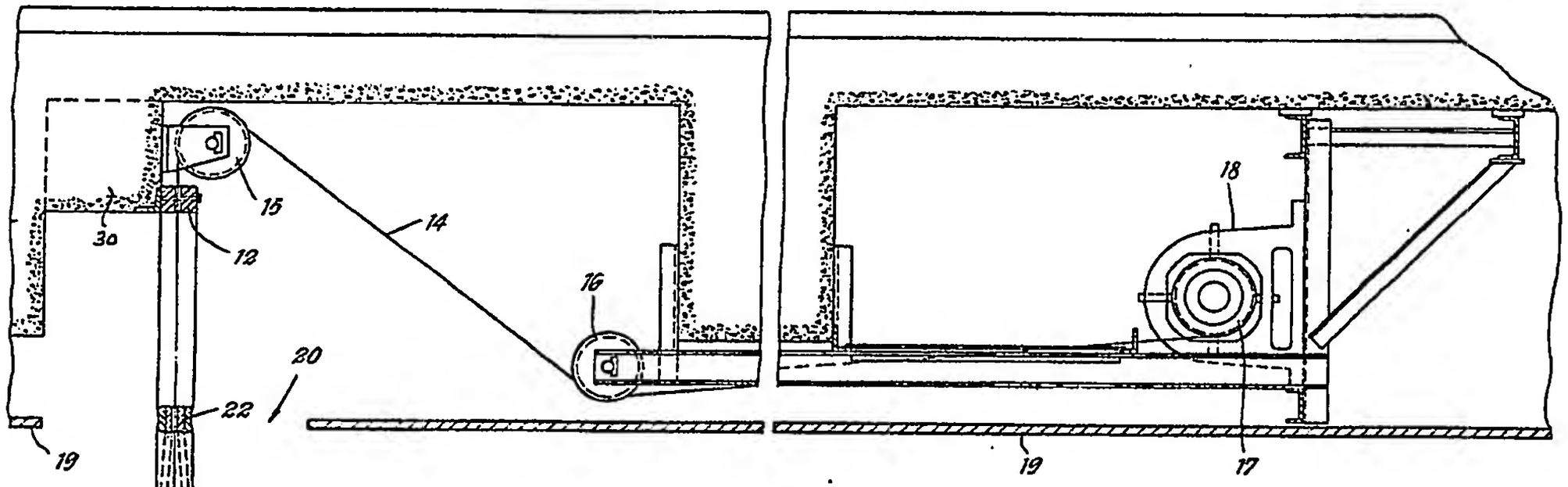

FIG.1

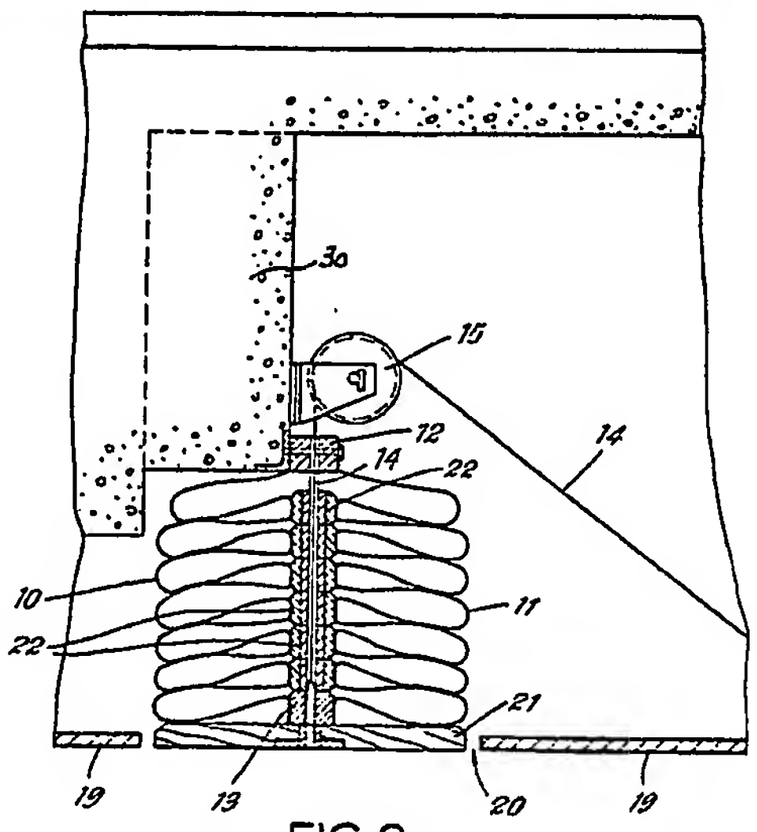

FIG.2

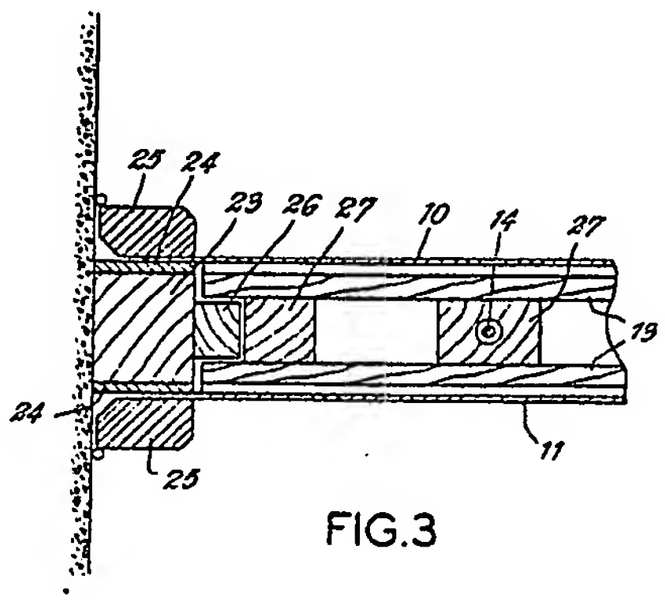

FIG.3